



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

nal motion of the earth on its axis contributes to effect the depression of the atmospheric fluid, principally by retarding or increasing the motion of the wind. If the wind blows from the east, the diurnal motion of the air round the earth's axis is lessened, and it will be more at liberty to gravitate or press freely on the surface of the earth, and consequently to raise the barometer. On the contrary, westerly winds, by conspiring with the diurnal motion, diminish the vertical pressure, and of course the barometer is generally lower with westerly winds than with easterly. The descent of the mercury is, we think, frequently influenced, in a very considerable degree, by the reaction of the wind on the inequalities of the surface of the earth. When a wind moving horizontally meets with an inclined plane, such for instance as the side of a hill or mountain, its direction is thereby more or less elevated, and an increased pressure necessarily takes place on the reflecting surface, while on the opposite side a decrease of pressure will be the consequence. The pressure indicated by our barometers in sheltered situations, being only the diminished pressure on the declining plane, will, of course, be less than is really the case, and this will, we presume, afford a satisfactory reason why the barometer is so generally depressed during storms, especially if the surface of the country is hilly or uneven.

The augmented elasticity communicated to the air by the action of heat or the presence of humidity, and the reduction of the incumbent mass by the action of the winds, have, no doubt, each a separate influence in disturbing the equilibrium of the ærial ocean.

The influence exerted by moisture existing in the air in a vaporous state, over the atmospheric pressure indicated by the barometer, is distinctly shown by the fall of the mercury, which is generally observed to precede rain. The quantity of moisture in the air, in the form of a vapour, varies with its temperature at the time, and its elasticity is, from the same cause, liable to variation. The weight of a certain quantity of vapour, supposing the temperature and other circumstances the same, is less than an equal quantity of air, in the proportion of about 5 to 8; of course, the increased humidity of the atmosphere will tend to lower the barometer, by removing the air immediately above it, and substituting in its place a lighter fluid.

As simplicity is the most beautiful, as well as the most useful ingredient, in our philosophical theories, the following is given as possessing this quality in a very tolerable degree, and as containing the substance of volumes of philosophical inquiry. Suppose any part of the atmosphere to be more than usually heated, the air will be proportionably expanded, and that of the neighbouring regions will, of course, rush in to restore the equilibrium: a greater quantity of air being thus brought together, and its elasticity being at the same time increased by the action of the heat, it will be better able to support the vapours with which it is loaded; these are also, from the same causes, more intimately mixed with the air, and, of course, cause the weather to be serene and fair. If, on the contrary, the atmosphere over any particular place be from any cause cooled considerably more than the surrounding portions, numerous currents of air will move off towards the warmer regions, leaving a kind of comparative vacuum, which is unable to support the numerous vapours with which it is always replete, and these, of course, precipitating, collect into clouds, the particles of which unite, and form drops of rain.

As, however, our atmosphere in its transparent state can, according to recent experiments, receive no heat from the sun by direct radiation, it becomes a matter of curiosity to see in what manner certain portions of that fluid become heated, so as to produce the effects in question. The surface of the earth in any particular place being heated by the immediate influence of the sun's rays, the heat is slowly communicated to the surrounding air, by reflection; this becoming, of course, lighter, will ascend, giving off its heat gradually, during the time of its ascent, till it has arrived at a part of the atmosphere of equal specific gravity with itself, where its tendency to ascend ceases. Its original situation on the surface of the earth being occupied by a fresh portion of cold air, the same

process is repeated, till the earth becomes of an equal temperature with the surrounding air.

It appears, of course, that it is by reflection that the air is heated, or, in other words, by the sun first heating the earth, from which the heat is gradually imparted to the air immediately over it. This air may, however, in its ascent, be carried to a considerable distance from the place where it was first heated, by the action of already formed currents in the atmosphere, and consequently the effect take place in a different part of the earth altogether.

On the whole, we may just observe that the changes in the atmospheric pressure, as indicated by the barometer, much surpass the regular and natural operations that could possibly be produced by any causes that have been yet assigned. By an accurate calculation, it appears that at times when difference of pressure, to the extent of nearly two inches, was observed in the mercurial column, in the course of a few days, the precipitation of the whole of the moisture in the atmosphere could not at the same time produce the depression of more than about a quarter of an inch. From this, and similar considerations, it appears evident that some other powerful cause must operate on the volume of air surrounding our globe. The influence of electricity has been mentioned with a considerable appearance of probability. The manner, however, in which the electric fluid acts on the air through which it passes; whether by the immediate operation of that powerful and subtle agent, or through the chemical effects which it is capable of producing, is as yet only matter of conjecture, and may form the subject of some future observation, as circumstances may occur to direct our attention to the subject. R.

SIGNS OF RAIN.

Written by the late Dr. Jenner, and sent as an excuse for not accepting the Invitation of a Friend to make an Excursion with him.

The hollow winds begin to blow,
The clouds look black, the glass is low;
The soot falls down, the spaniels sleep,
And spiders from their cobwebs peep,
Last night the sun went pale to bed,
The moon in halos hid her head;
The boding shepherd heaves a sigh
For, see, a rainbow spans the sky,
The walls are damp, the ditches smell,
Clos'd is the pink-ey'd pimpernell.
Hark! how the chairs and tables crack,
Old Betty's joints are on the rack;
Loud quack the ducks, the peacocks cry;
The distant hills are looking nigh.
How restless are the snorting swine.
The busy flies disturb the kine;
Low o'er the grass the swallow wings;
The cricket, too, how sharp he sings;
Puss on the hearth, with velvet paws,
Sits, wiping o'er her whisker'd jaws,
Through the clear stream the fishes rise,
And nimbly catch the incautious flies;
The glow-worms, numerous and bright,
Illum'd the dewy dell last night.
At dusk the squalid toad was seen,
Hopping and crawling o'er the green;
The whirling wind the dust obeys,
And in the rapid eddy plays;
The frog has chang'd his yellow vest,
And in a russet coat is drest.
Though June, the air is cold and still;
The mellow blackbird's voice is shrill,
My dog, so alter'd in his taste,
Quits mutton-bones, on grass to feast;
And see, yon rooks, how odd their flight,
They imitate their gliding kite,
And seem precipitate to fall—
As if they felt the piercing ball:
'Twill surely rain, I see, with sorrow;
Our jaunt must be put off to-morrow.

DUBLIN.

Printed and Published by P. D. HARDY, 12, Temple Lane, and 3, Cecilia Street; to whom all communications are to be addressed.

Sold by all Booksellers in Ireland.

In Liverpool, by Willmer and Smith, in Manchester, by Gray, in Birmingham by Drake; in Nottingham, by Wright; in Edinburgh by H. Grant and Son; in Glasgow, by J. Nevin, Jun and in London, by Richard Groombridge, 6, Fannyer-alley, Paternoster row,